

**ICMI CYANIDE CODE  
SUMMARY AUDIT REPORT  
CERTIFICATION AUDIT**

**CYANIDE TRANSPORTATION  
SUPPLY CHAIN #10 - TURKEY SUPPLY  
CHAIN**

**CYPLUS GMBH**  
DEUTSCHE TELEKOM – ALLEE 9  
64295 DARMSTADT  
GERMANY

Submitted to:  
**International Cyanide Management Institute**  
1400 I Street, NW, Suite 550  
Washington, DC 20005  
USA

**AUTHOR:**  
**LULU INTELLIGENT ORGANIZATION**  
CONSULTING • TRAINING • AUDITS • CERTIFICATION • VERIFICATION  
DR.-ING. BENNO STEINWEG  
REGISTERED LEAD AUDITOR  
ISO 9001, ISO 14001, ISO 50001, ICMC  
**HASLACH 4**  
**WEITNAU 87480 - GERMANY**

Name of Cyanide Transportation Facility: CyPlus GmbH (Röhm Group)  
 Name of Facility Owner: CyPlus GmbH (Röhm Group)  
 Name of Facility Operator: CyPlus GmbH (Röhm Group)  
 Name of Responsible Manager: Stefan Welbers, Managing Director  
 Address: Deutsche Telekom – Allee 9, 64295 Darmstadt  
 State/Province: Germany  
 Telephone: +49-6151 863-0  
 E-Mail: [stefan.welbers@cyplus.com](mailto:stefan.welbers@cyplus.com)

Additional contact person:

Florian Steinmann | Business Process & ICMC Manager  
 Phone: +49 6151 863-7396, [Florian.Steinmann@cyplus.com](mailto:Florian.Steinmann@cyplus.com)  
 CyPlus GmbH, Deutsche Telekom – Allee 9, 64295 Darmstadt, Germany, [www.cyplus.com](http://www.cyplus.com)

**Location detail and Description of operation:**

The German company CyPlus GmbH is part of the Röhm Group. CyPlus produces cyanide as a manufacturer in the German Wesseling plant. From Wesseling, Germany the cyanide is distributed in different packaging variations using different supply chains. The customers / the mines can be found on different sites across the world. Accordingly, different supply chains are utilized. In this report, the supply chain no. 10 is covered, starting from dangerous finished goods storage and handling center "Alfred Talke GmbH" in Huerth (close to Cologne) / Germany across the Mersin (Turkey) port to the final destination in Turkey (Öksüt mine site close to Kayseri, Turkey). The supply chain consists of different transportation modes, i.e. truck, rail and overseas vessel transportation. Remark: the starting point (dangerous finished goods storage and handling center "Alfred Talke GmbH" in Huerth) is not part of supply chain no. 10, but part of CyPlus's supply chain no. 1.

**Supply from the production site to the customers / mines**

CyPlus's production site in Wesseling, Germany is ICMC-certified and registered since July 24, 2006 with no suspension since then. From Wesseling site the cyanide is shipped to mines all over the world by using SLS<sup>1</sup> containers. The CyPlus company also acts as a consignor for cyanide transportations. This report is focusing on the Supply Chain #10: dangerous finished goods storage and handling center (close to German production site) to mine site in Turkey.

**Involved transportation companies in supply chain #10**

Party No.	Name, Address	Function within supply chain #10
1	Jenusch Transporte Dycker Feld 49 42653 Solingen Germany	Jenusch Transporte company is operating the truck transport of cyanide containers between Alfred Talke GmbH's external warehouse area (which is part of CyPlus's supply chain No. 01) and DUS terminal Cologne-Eifeltor, where the containers are loaded from truck to railway wagons (approx. 2,5 km). CyPlus's SC#10 starts, when the containers are picked up by Jenusch Transporte at Alfred Talke GmbH's dangerous goods depot.

<sup>1</sup> also called Isotainer or Iso Tank



2	<b>ITT Logistics Uluslararası</b> <b>Elmalı Sok. 9/11</b> <b>41400 Balcık / Gebze / Kocaeli</b> <b>Turkey</b>	Transportation company ITT is operating the truck transport of cyanide containers between the Pendik port to the Öksüt gold mine site close to the city of Kayseri, located in Uşak Province, Turkey (approx. 290 km). CyPlus's SC#10 ends at the Mine site.
---	--	---

**Short description of location detail and description of operation:**

CyPlus' main contractors Alfred Talke GmbH and VTG Tanktainer GmbH subcontract different transportation companies along the supply Chain from Huerth / Germany to the mine site in Turkey. Jenusch Transporte company (in Germany) and ITT transportation company (in Turkey) are sub-contracted as qualified dangerous goods (here: sodium cyanide) transporter for CyPlus GmbH (CyPlus's main contractor: Alfred Talke GmbH and VTG Tanktainer GmbH) to transport cyanide by road from Huerth to Cologne (start of SC#10 in Germany) and from Mersin port to Öksüt mine site close to city of Kayseri (Turkey).

## Auditor's Finding

This operation is

- ☒ in full compliance
- ☐ in substantial compliance \*(see below)
- ☐ not in compliance

with the International Cyanide Management Code.

\* For cyanide production operations seeking Code certification, the Corrective Action Plan to bring an operation in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.

Audit Company .....	LULU Intelligent Organization
Audit Team Leader .....	Dr. Benno Steinweg
Email .....	<a href="mailto:Benno.Steinweg@hs-kempten.com">Benno.Steinweg@hs-kempten.com</a>
Names / Signatures of other auditors ...	n/a
Date of audit .....	October 25, 2021

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Production Operations and using standard and accepted practices for health, safety and environmental audits.



## PRINCIPLE 1 – TRANSPORT

### Transport cyanide in a manner that minimizes the potential for accidents and releases

#### **Transport Practice 1.1: Select cyanide transport routes to minimize the potential for accidents and releases.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 1.1  
☐ not in compliance with

#### *Summarize the basis for this Finding:*

CyPlus as the transport company has contracted the transport operation activities to the German Alfred Talke GmbH and to VTG Tanktainer GmbH companies. On the other hand, under authorization of CyPlus, VTG Tanktainer GmbH subcontracts the local activities to their local partner company ITT Logistics and Alfred Talke GmbH subcontracts the local activities to their local partner company Jenusch Transporte. Additionally the ERP consultant Hydra is also subcontracted by CyPlus to support with emergency assessment, planning and assistance services along the Turkish portion of the supply chain. All of the parties are required to fulfill CyPlus' quality and HSE requirements, controlled by service level agreements. This contracting scheme is clearly defined in CyPlus' ERP. Within this ERP a process to select transport routes to reduce potential risks with respect to accidents and releases is included. This process takes into account the population density along the potential route, infrastructure installations (e.g. bridges, road foundations etc.), rivers, creeks, ponds, in general proximity to water. The total transportation route starting from the dangerous goods depot in Germany (the depot is not part of SC#10, but part of the upstream SC#01) and ending at the Turkish mine site is clearly defined. Potential scenarios must be taken in consideration; advice is given on how to react with respect to detected risks. The "Selection of Routes" process is clearly defined and carried out. During the road risk assessment and selection process input from communities, police, public agencies and further interested parties is required to have the full set of information for performing a risk assessment. The route selection and evaluation process is performed by using CyPlus's MS Excel based form, which requires the definition and implementation of measures to address risks at each and every portion of the selected route. Routinely, after each and every transport, a standard feedback form is completed to inform about issues, changes etc. of the current route. Annually –or following a planned change- during a management review process a periodic reevaluation is performed; respective results are discussed and shared with CyPlus. This is also to cooperate with the authorities. CyPlus' ERP deals in detail with the involvement of external interested parties (mutual aid scheme). One of several ERP outcomes is the escorting process, where Hydra<sup>2</sup> escorts the convoy, consisting of one or more containers. Hydra escorts the convoy by using a fully equipped emergency truck. Further regulations are defined focusing on communication during routine operation and during emergency cases (alerting).

<sup>2</sup> External Emergency Response Consultant



**Transport Practice 1.2: Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 1.2  
☐ not in compliance with

*Summarize the basis for this Finding:*

CyPlus is not active in transport operating activities on site. This activity is subcontracted, as described in Transport Practice 1.1, to different parties, e.g. the road truck transporter in Turkey: ITT Logistics. The involved transport / handling companies (Jenusch Transporte, ITT Logistics) use only trained, qualified and licensed drivers / operators to operate the respective equipment (e.g. ITT's trucks). This is basically required in CyPlus' ERP and in the service level agreement between the parties CyPlus, Alfred Talke GmbH, VTG Tanktainer GmbH, Jenusch Transporte, ITT and Hydra. The qualification requirements are focused on both, routine activities during normal operation and actions / behavior during emergency cases / situations. Special training is planned, scheduled and executed, too.

Operating personnel does not have to do handling activities with cyanide, but only transport activities and handling activities with originally closed containers. The trainings do focus on scenarios and potential incidents and accidents. Exercises are performed routinely, e.g. simulation of spills and the respective reaction on that. Basic trainings are required according to training matrix (knowledge about procedures, forms, processes etc.). These basics are replenished by further trainings with respect to spill handling, emergency reaction etc. The documentation shows the training history and the respective effectiveness checks of the trainings. This is completed e.g. by specific Turkish re-qualification documentation for truck drivers which is mandatory.

**Transport Practice 1.3: Ensure that transport equipment is suitable for the cyanide shipment**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 1.3  
☐ not in compliance with

*Summarize the basis for this Finding:*

CyPlus as an organization does not transport loads on site at the Mersin to Kayseri region. Local transports at that region are organized and carried out by CyPlus's global partner VTG Tanktainer GmbH. VTG utilizes –in coordination with CyPlus– the local dangerous goods transportation company ITT Logistics. ITT is qualified by local authorities for transportation of dangerous goods and audited by VTG and CyPlus to take over the local cyanide transportation activities on behalf of CyPlus and VTG Tanktainer GmbH.

Various maintenance scenarios are in place: (1) Checks in advance and after each transport, defined in each individual transport folder / documentation. (2) Planned routine technical checks and small standard maintenance items and Routine expert maintenance activities, done by external garages, dedicated to truck-brand, mostly certified by the respective truck OEMs. The trucks and the respective tools, technical equipment and trailers are obviously maintained to operate within the loads they are handling.

ITT runs procedures to require a verification of each single weight-amount to be transported. Nevertheless: they use only new, heavy load platform trailers, that are (far more as) sufficient for the load they must bear.

ITT uses trucks for the cyanide transportation on transport route No. 10. No ferry, barge or other means of transportation are in use. When using a TEU (20 foot equivalent unit) the maximum load is defined. No unloading / re-loading etc. activities are done by ITT. So the container – once loaded by CyPlus in Germany – will not be opened and thus the load amount will not be changed. The use of heavy load trucks safeguards, that no overload will occur.



**Transport Practice 1.4: Develop and implement a safety program for transport of cyanide.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 1.4  
☐ not in compliance with

*Summarize the basis for this Finding:*

The container is sealed by CyPlus in Germany and only opened at the mine, thus internal damage cannot be identified in route #10. Turkish transport regulations with respect to marking and placarding is followed. A pre-trip checklist is completed for the truck and trailer before the vehicle is loaded with the cyanide containers. The Fleet Preventative Maintenance (PM) policy states that preventative maintenance is performed on each vehicle. PM tasks are clearly identified, scheduled and followed. These tasks are identified in the scheduled maintenance system of truck OEM's manual.

The Management System of ITT specifies –in accordance to local regulations- the maximum hours of duty for the drivers. This includes a section on drug and alcohol policy. The policy includes specific statements on drug and alcohol usage, testing, alcohol and drug dependence, use of drugs and alcohol on the company premises or whilst driving and the consequences of positive test results. The policy also covers random testing and searches. The policy and the company recognize alcohol and drug dependence as a treatable condition and will provide appropriate support and assistance within the bounds of the policy.

Standard operating procedures are available, covering the topics modifying the transport, caused by unexpected incidents, preventing load from shifting during all handling activities etc. Records of evidences demonstrating the operation of the safety program are archived according to general doc's control standard operating procedure.

**Transport Practice 1.5: Follow international standards for transportation of cyanide by sea.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 1.5  
☐ not in compliance with

*Summarize the basis for this Finding:*

The shipments of cyanide by sea are transported in compliance with the IMDG Code. According to the due diligence investigations the contracted ocean carrier (DFDS<sup>3</sup>; Danish Det Forenede Dampskibs-Selskab) could demonstrate that the current valid amendment of the IMDG Code is available (printed and online) and in use and that all employees concerned are made aware by delta trainings about new and/or changed legal requirements in comparison to the previous edition. Further the ocean carrier could prove, that all vessels are certified according to the ISM- and the ISPS Code.

Current Due diligence investigations were performed by CyPlus on-site at the ocean carrier's port site. Finally it can be concluded, that DFDS is able to transport cyanide and other DG in a safely manner.

<sup>3</sup> in mid 2018, DFDS closed the acquisition of the Turkish shipping company U.N. Ro-Ro, which was/is the carrier for CyPlus's cyanide at that supply chain no. 10

**Transport Practice 1.6: Track cyanide shipments to prevent losses during transport.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 1.6  
☐ not in compliance with

*Summarize the basis for this Finding:*

The communication along the full supply chain – focusing the location of the material- is established by each contributor of the supply chain. This information is often –where necessary- made available by using internet based applications. Also communication with and among ITT vehicles during road transportation in Turkey in the cyanide convoy is undertaken by using mobile phones and, short-wave radio, and satellite phones – as well as internet-based monitoring of location and selected truck conditions. All communication equipment is tested prior to convoy departure. The drivers at the time driving do not use the communications equipment. ITT's responsible safety officer communicates with the convoy leader and support vehicles. Convoy managers have all the appropriate telephone numbers to communicate with ITT head office and appropriate emergency responders and emergency services on the convoy route. A current telephone list is part of the ERP resp. equipment documentation on each vehicle being part of the convoy. The ITT head office in cooperation with emergency service provider Hydra manages all associated communications e.g. with the mine and the cyanide producer. ITT transports and delivers sealed containers. A full and defined standard package of documents is part of the convoy management, also on the road.

The Road Assessment SOP requires to find out potentially blackout area with respect to functionality of communication equipment. The availability of technical equipment and spare parts are objects to be checked routinely in advance of each convoy order to the mine. GPS tracking is implemented for all convoys. Cell phone coverage is assured on the entire route.

ITT receives, transports and delivers sealed SLS containers, originally packed by CyPlus in Germany. A waybill accompanies the convoy which includes chain of custody data such as container numbers, waybill numbers, shipping documentation, SDS, packing list, bill of lading, customs declarations, and producer invoice.

Drivers have shipping documentation including the Bill of Lading with them at all times during a shipment. Information regarding the type of material transported, the type of container, the number of packages, and the weight of the shipment is consistently entered onto the Bill of Lading by the shipper. Drivers also have the sodium cyanide SDS and Emergency Response Guides with them during deliveries.



## PRINCIPLE 2 – INTERIM STORAGE

**Design, construct and operate cyanide interim storage sites to prevent releases and exposures**

**Transport Practice 2.1: Store cyanide in a manner that minimizes the potential for accidental releases.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 2.1  
☐ not in compliance with

*Summarize the basis for this Finding:*

In advance of the ICMC Transportation audit CyPlus organized a series of due diligence audits, referring to all supply chain no. 10 partners, starting at Alfred Talke's organization in Germany. The result of the due diligence audits was laid down in respective reports. The reports were made available for the ICMC Transportation Auditor before the on-site audit at Jenusch transport company (Germany) and at ITT transportation company (Turkey) was performed. The reports show, that the due diligence audits were performed fully (with respect to the relevant ICMC requirements). CyPlus' due diligence auditors in charge are clearly qualified.

It was recognized that -also at the port sites- **no need for interim storage facilities and warehousing** in terms of Cyanide Code definitions do occur.

National and international labeling provisions are maintained. Smoking, open flames, eating and drinking at the ports is regulated by the quality / safety management system of the port site. Derived from that system, dedicated areas are defined where those special activities are allowed and also special areas, where those are restricted. Requirements covering personal protective equipment is clearly defined and regulated in both port's advising systems.

At both ports (Trieste, Mersin) following principles are established: the areas are protected by a fence and additionally supported by a technical and organizational based access control system. Access to the site is controlled at different control points / entry points. Only authorized persons / equipment are allowed to entry. Gate guard service is part of the port organization. Sufficient security and access measures are in place.

Sufficient volume to handle spillage is available. The requirement to fulfill preventive spill handling for all the other potentially handled goods leads to sufficient volume of back-up capacity to contain any spilled materials and minimize the extent of a release.

Finally it can be concluded, that the Port of Trieste as well as the Port of Mersin is able to manage cyanide and other DG in a safely manner.

## PRINCIPLE 3 – EMERGENCY RESPONSE

**Protect communities and the environment through the development of emergency response strategies and capabilities**

**Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases.**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 3.1  
☐ not in compliance with

*Summarize the basis for this Finding:*

CyPlus is not active in transport operating activities on site. This activity along the full supply chain No. 10 is contracted to the companies Alfred Talke GmbH and VTG Tanktainer GmbH, which are special expertise companies in dangerous goods handling, packaging, storage and transportation, active especially in and all over Europe. Together with both main contract partners the planning for emergency responding with all partners along the supply chain no. 10 is defined, checked during due diligence audits (most of the partners do have safety systems in place to perform a highly qualified emergency response system) and in case of ITT newly established according to CyPlus' emergency responding requirements. The local Turkish transport company ITT Logistics has –in conjunction with Hydra company (ER service provider)- implemented an Emergency Response Plan. This is a detailed document and includes, among other information, the emergency response team organization chart, emergency phone directory, communication channels guidelines, emergency scenarios, and instructions to attend specific and general emergency scenarios.

The ERP considers all aspects of the transport infrastructure. Special attention is given to the road assessments, where the specific conditions of the routes and the respective installations are focused (e.g. bridges over water etc.). The plan considers the design of the transport vehicle. Container trailers are specified with minimum load requirements and special adaption points to fix the different container bottom designs.

The ERP includes descriptions of response actions, as appropriate for the anticipated emergency situation. Trainings are done, covering the given scenarios. The plan also shows the respective emergency procedure, phone numbers and persons / functions to be involved in case of emergency / spill etc. as well as addresses of different functions (police, hospital, mayors of different communities along the route etc.). During the Turkish road portion of the supply chain no. 10 all of the above referenced response actions are actively accompanied by the emergency response service company Hydra (contracted by CyPlus).

The plan identifies the roles of outside responders, medical facilities and communities in emergency response processes / cases. The alerting system in case of emergency is described, defined and routinely checked and trained, respectively.



**Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 3.2  
☐ not in compliance with

*Summarize the basis for this Finding:*

All involved parties provide emergency response training for the appropriate personnel. The training matrices require different kinds of trainings. Driver's training requirements on how to act and react as well as information on the product cyanide etc. is available. Those trainings are held by different parties. The scheduling is following training concepts, which are based also on CyPlus' requirements.

Descriptions of the supply chain no. 10 specific emergency response duties and responsibilities of personnel are defined in detail in Hydra's documentation. This documentation is under control of Hydra's quality and HSE system and checked by CyPlus. Under this regulation the control of the above mentioned docs is executed and thus it is safeguarded that each involved party always holds the current version of the documentation.

There is a list of all emergency response equipment that has to be available during road transport and along the transportation route. Hydra, the emergency response service company (contracted by CyPlus) is made responsible to have the right and full list and to take care, that the defined equipment and materials are available in full and in full function. The emergency response kit includes all items, as required by the Code and the referenced regulation as well as Turkish legal requirements.

The transport vehicle operators receive initial and periodic refresher training in emergency response procedures including implementation of the Emergency Response Plan – as far as this is relevant. ITT-together with Hydra- has set up a system of initial and refresher trainings, taking into account the individual persons training and experience history.

CyPlus as the transport company has subcontracted the global transport operation activities to the German Alfred Talke GmbH and to the German VTG Tanktainer GmbH company. On the other hand, under authorization of CyPlus, VTG Tanktainer GmbH subcontracts the local transport activities to their partners, here: company ITT. Additionally, the ERP consultant Hydra is also subcontracted by CyPlus to support with emergency assessment, planning and assistance services, as well as trainings. All of the parties are required to fulfill CyPlus' quality and HSE requirements, controlled by service level agreements.

**Transport Practice 3.3: Develop procedures for internal and external emergency notification and reporting**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 3.3  
☐ not in compliance with

*Summarize the basis for this Finding:*

Hydra's ERP as well as CyPlus's safety management system include a communication process description that safeguards the full information of all interested and acting parties in case of emergency. This includes –among other aspects- listings of the members of the internal response team members (including the manufacturer CyPlus, Hydra, mine site and ITT), and those of external emergency responders (police, firefighters, hospitals, authorities, etc.) along the supply chain. The emergency notification and reporting procedures, especially communication towards ICMI, are also included within CyPlus's Emergency Response Plan and also in the derived ERPs from the partners along the supply chain..

The respective documentation is under control of Hydra's quality and HSE system. Under this regulation the control of the above mentioned docs is executed and thus it is safeguarded that each involved party always holds the current version of the documentation. This is checked routinely by / during internal audits.

**Transport Practice 3.4: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 3.4  
☐ not in compliance with

*Summarize the basis for this Finding:*

Descriptions of the specific emergency response duties and responsibilities of personnel are defined in detail. The measurements and actions by and during spill are defined and advised in detail. The methods to be used to decontaminate the environment/spillage are described, e.g. prevention of spill entry into waterways, sewers, basements, or confined areas.

It is also established that chemicals should not be added to water bodies to control the pH or to neutralize cyanide. Additionally, it includes instructions for assessing the impact on surface water bodies and to prevent the population to be poisoned by contaminated water. These instructions are part of the emergency response instructions to cyanide spills with contact to water and water bodies.



**Transport Practice 3.5: Periodically evaluate response procedures and capabilities and revise them as needed**

This operation is ☒ in full compliance with  
☐ in substantial compliance with Transport Practice 3.5  
☐ not in compliance with

*Summarize the basis for this Finding:*

The necessary provisions for periodically (min. once per year or driven by events) reviewing and evaluating Hydra's ERP are clearly defined and advised. In conjunction with a potential adjustment or change all other corresponding response procedures and requirements must be adjusted (e.g. ITT / Hydra's ERP or ITT's instructions within their quality and HSE system). Examples of change requests coming from events were inspected. In case of any event, the entry in the order folder would –if necessary- drive an update in the ER-plans of the different parties.

Provisions for periodically conducting emergency mock-drills are made. The respective drills are defined by CyPlus. The training concept intends to involve all relevant parties, especially the mine site, that organizes and performs trainings by it's own with a high grade of quality and practical orientation. It is intended and scheduled to have mock drills minimum once per year, also in close cooperation with the respective minesite.

The revision system of Hydra's ERP is defined. It is required to do revision annually or event driven. Revisions or recommendations are to be implemented as appropriate. It is also scheduled to have a routine management review and a performance evaluation of the plan itself, respectively.